DEPUTY UNDER SECRETARY OF STATE
WASHINGTON

~~HANDLE VIA BYEMAN CONTROL SYSTEM~~

11 July 1966

~~TOP SECRET~~

MEMORANDUM TO :

DOD	- Mr. McNaughton
	- Dr. Flax
ACDA	- Mr. Fisher
CIA	- Mr. Sheldon
White House	- Mr. Keeny
	- Mr. Charles Johnson
NASC	- Mr. Welsh
NASA	- Mr. Seamans

SUBJECT : Report of the NSAM 156 Committee on "Political and Security Aspects of Non-Military Applications of Satellite Earth-Sensing"

Attached is the final report on "Political and Security Aspects of Non-Military Applications of Satellite Earth-Sensing", as transmitted to the White House.

U. Alexis Johnson

Enclosure:

Report on "Political and Security Aspects of Non-Military Applications of Satellite Earth-Sensing"

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EXECUTIVE OFFICE OF THE PRESIDENT

BUREAU OF THE BUDGET

WASHINGTON, D.C. 20503

APR 4 1966

Honorable Dean Rusk
Secretary of State
Washington, D. C. 20520

Dear Dean:

There is a growing interest in the possible uses of satellite reconnaissance-type systems for peaceful purposes. This interest is reflected in studies being conducted under the auspices of the National Aeronautics and Space Administration to investigate the potential for earth sensing from satellites. We believe it is essential to study the relationships between these peaceful programs and our classified reconnaissance programs if we are to avoid unplanned disclosure of our reconnaissance-type systems.

We think such a study should review our current security restrictions on reconnaissance activities and our national policy established under NSAM 156, and then develop a plan of action based on this review. Accordingly, we wish to request that you convene the NSAM 156 ad hoc committee for this purpose. Enclosed for the committee's consideration is a list of issues which must be addressed if we are to develop a satisfactory solution to this problem and an appropriate plan of action. The committee will probably develop additional points for consideration in the course of its deliberations.

It would be most helpful if the committee could complete its work on this question by July 1.

Sincerely,

Charles L. Schultze
Director, Bureau of the Budget

Donald F. Hornig
Director, Office of Science and Technology

Enclosure

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[redacted]

[redacted]

Relationship of the AAP to the NRP - Potential Issues

1. Should there be a national plan defining the discrete steps to be taken in the next four or five years in a program to gradually expose satellite surveillance capabilities to public view? If so, what major steps should be included in the plan and what objectives should it aim to achieve? Who should be responsible for coordinating the formulation and execution of the detailed actions necessary to accomplish this plan?

Examples of possible steps to be considered:

(a) Declassification of the ARGON photography and the geodetic data derived from it.

(b) Declassification of the Apollo-[redacted] system and its photographs.

(c) Sanitization and declassification of selected NRP photos to demonstrate value of peaceful economic or scientific uses.

(d) Declassification of first generation reconnaissance systems, e.g., CORONA and [redacted], and the non-bloc photography collected by these systems for use in programs found to be economically feasible.

E.O. 13526, section 3.3(b)(1)

2. During the period that the satellite reconnaissance program remains classified, what role, if any, should NASA have in planning and executing missions involving high-resolution image sensors of reconnaissance quality?

a. Should NASA be allowed to plan or conduct earth orbital missions involving high-resolution imagery sensors? If so, what control or monitoring mechanism should be established to handle problems that arise about the extent of the tests, classification, and press releases?

b. Should any special control be applied to NASA's ground and aircraft based experimental program which involves high-resolution imagery sensors?

c. Is it possible to make available to NASA, now, data already collected by the NRP in order to evaluate its economic and scientific usefulness? If so, how and at what level of classification?

[redacted]

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[redacted]

3. Who should decide the classification to be placed upon studies or development of new high-resolution imagery sensor hardware that NASA may wish to pursue from time to time?

4. Should the development of such hardware be centralized in the Department of Defense? If not, how should it be coordinated?

5. In view of the MOL capability for making high quality astronomical measurements, can MOL be used to meet NASA requirements for orbital astronomical experiments? If so, how and at what level of security classification?

~~TOP SECRET~~ ~~HANDLE VIA BYEMAN CONTROL SYSTEM~~

Political and Security Aspects of Non-

Military Applications of Satellite Earth-Sensing

1. The NSAM 156 Committee has reviewed the issues raised in the letter of April 4 from Mr. Charles L. Schultze and Dr. Donald F. Hornig to Secretary of State Dean Rusk (Appendix A), and submits the following report of its conclusions.

2. We believe that the "Report on Political and Informational Aspects of Satellite Reconnaissance Policy" prepared pursuant to NSAM 156 and approved on June 30, 1962, for transmittal to the President remains basically valid. The objective of avoiding open challenges to satellite observation activity has been generally met, and the Soviet Union has muted -- though not retracted -- its challenge to the principle of military space reconnaissance. Agreement has been reached on fundamental legal principles which do not ban (though they also do not explicitly sanction) space observation. Also, since 1962 the Soviets have developed a major operational satellite reconnaissance program of their own. Developments over the past four years have, therefore, led to a shift of emphasis from a need for actions that will build world acceptance of space observations, then a generally novel idea, to actions which will preserve the present wide tacit acceptance of such activities. Accordingly, there does not seem to be any imperative to launch disclosure initiatives for the purpose of furthering the general principle of space observation. On the other hand, it remains necessary to consider the possibly adverse effects of new public disclosures or other initiatives which could upset the present satisfactory situation.

3. Our chief concern over a challenge to the legitimacy and propriety of satellite reconnaissance has been the Soviet position. Over the past several years, the Russians have withdrawn insistence on branding such activity as illegal in the cases of international space agreements that they desired, and they do not press such arguments in the UN, but they have not stopped referring to such activities as espionage. Moreover, the statements by Khrushchev and his son-in-law, Adzhubei, admitting such Soviet activities have never been printed in the Soviet press or acknowledged as official. In the first post-Khrushchev statement referring implicitly to Soviet satellite reconnaissance,

— phrase "and as illegal" has been deleted

Brezhnev on July 1 dismissed as untrue "fables" alleging that the US has "all-seeing spy satellites", larger numbers of missiles, and invulnerable submarines. These fables, he said, are intended for simpletons who do not know "what missiles, what satellites, what submarines" the USSR has. Notwithstanding this implied admission of Soviet satellite reconnaissance, we see continuing pertinence of the NSAM 156 Report conclusion that: "It is extremely important that the US avoid public statements about our satellite operations that would pose a direct political challenge to the Soviet Union on the sensitive issue of reconnaissance."

4. It is now necessary to give more attention than heretofore to the reactions of other countries. To date, increasing public awareness of the existence of US and Soviet military space reconnaissance has not prompted concern in other countries for their own political or military security interests, but such concern is likely to develop as others become more aware of the nature and scope of satellite surveillance. Disclosure of surveillance capabilities, even indirectly in non-military contexts, will awaken new interest and in some cases concern. Accordingly, any such disclosure should be carefully considered and planned so as to prevent or reduce adverse reactions by other states that would be undesirable in their own right and could also be manipulated to our detriment by the Soviet Union.

5. Direct disclosure of satellite reconnaissance for the purpose of gaining world acceptance of the principle of space surveillance is both unnecessary and liable to provoke adverse reactions from the USSR and other states. On the other hand, in the long run the security of our reconnaissance program can be served by encouraging the present natural, gradual growing world recognition of the potentialities of satellite earth-sensing in the context of scientific progress and economic betterment. Such recognition will grow whether we stimulate it or not. We can influence and channel, and if we wish retard, such a development -- but we cannot prevent it. We should recognize that any apparent US efforts to suppress or hobble peaceful applications because of presumed (and rightly presumed) sensitivity over protecting military reconnaissance would not serve our objective of retaining

or improving tacit acceptance of unrestricted earth observation and sensing. A US position of favoring, leading, and sharing in non-military applications of satellite earth-sensing will not involve the same risks of provoking a confrontation with the Soviet Union as would direct disclosure of reconnaissance. We should insure, insofar as possible, that these initiatives are not construed by the Soviets as likely to result in general disclosure of information about her military capabilities which the USSR wishes to protect.

6. As noted above, non-military uses of space which require surveillance of the earth by various sensors would as a side effect inevitably stimulate wider awareness of the capabilities of reconnaissance, but in a more favorable context than would direct disclosure. We should recognize that different uses of any technology will continue to evoke different reactions. The familiar home, travel and hobby uses of ordinary cameras do not lessen objections to their use for intelligence collection. The same will be true of satellite cameras, and the Soviets have already shifted their position several years ago to objecting to the use of satellite intelligence collection, rather than objecting to satellite observation per se. (If in the future the Russians tacitly admit to having reconnaissance satellites of their own, along the lines of Brezhnev's statement referred to above, they would probably still claim that intelligence collection by the United States served different and nefarious purposes.) This does not, however, seem to be a valid basis for opposing development or concurrent non-military and continued military reconnaissance programs.

7. NASA's and other proposals for developing earth-sensing programs which might overlap, be derived in sanitized form from, or stimulate public interest in, classified reconnaissance programs should be judged on the basis of criteria such as feasibility, preference to non-space alternatives, cost, problems in protecting classified technology, and risks of security compromise of the classified reconnaissance program. It should usually be possible by careful planning to mitigate possible adverse political repercussions of the incidental disclosure of surveillance capabilities and hence to give political and national security clearance to such programs. The best justification for such programs, and the best general basis for calming any alarm over their effects will be valid scientific or economic payoff in which other countries can expect to share.

8. The primary area of competition in space between the United States and the Soviet Union has been and will for the next few years continue to be the race to the moon. This is, however, largely a short term competition for the 1960's. In the longer run, there may develop a competition in space applications developing the resources of the world, particularly of the underdeveloped world. Communications satellites and meteorological satellites have already contributed to this end, but their benefits do not exhaust the potential value of earth-sensing satellites for developing and using natural resources.

9. In the deliberations of this Committee, differences of view arose over the relative merits of using satellites or aircraft for natural resource surveys and other earth-sensing activities in the "reconnaissance range" of satellite sensing (that is, roughly below 20 meters in precision of ground resolution). This Committee has not attempted to resolve such differences; they clearly reflect an important question, but our present focus is on political and security guidelines for use of such satellite programs in this range as may be determined to be economically and scientifically justified. In addition, there would appear to be unresolved questions with respect to the alternatives of using unmanned or manned satellites for these purposes.

10. A natural resources program of the kind in which NASA is interested can in time provide vast data, using a variety of spaceborne sensors. The NASA program as now envisaged does not include operational use of remote-sensing techniques before the 1970s, principally because most of the sensors are presently programmed for use in sophisticated manned spacecraft as part of the Apollo Applications Program. However, experimental programs might be initiated as early as 1968. There is no funding as yet of less complex, less expensive unmanned systems.

11. One current problem which emerges is the question of use of certain equipment and photographic materials from the classified reconnaissance program to assist NASA in evaluating the utility of, and developing techniques for, satellite photography for exploiting natural resources. In order to develop a thorough understanding of observation satellite technology, it would seem desirable to consider whether NASA can be provided -- on a classified basis, but

perhaps under less restrictive classifications controls -- both selected satellite photographs for evaluation, and selected satellite hardware, including cameras. The groundwork would thus be prepared for possible future operational use in natural resource survey missions. The equipment to be used need not -- and in our view should not -- represent the latest, highest resolution cameras. But considerable useful work could, for example, be accomplished with resolutions on the order of 10-15 feet. Some of the many applications that might be usefully served with resolutions of this level include mapping, surveys of water resources, agricultural and forestry surveys, and studies of land use over broad areas. Suitable cameras for these purposes already exist in the KH programs, and the release to NASA of both selected equipment and photography taken in the past might be useful and presumably could be done without raising unmanageable security problems. The cameras and photography from the KH systems could remain classified; only the products of actual NASA missions would probably need to be unclassified. In cases where a decision had been made for NASA to proceed with a given program for which unclassified cameras or other equipment could be used, NASA could let contracts to the NRO industrial contractors, who could then in fact adapt on an unclassified basis equipment originally designed for the classified program. In the case of classified equipment, the NRO could provide such assistance, as it is doing [redacted] in the Apollo lunar-orbiter program, [redacted] could be arranged for necessary adaptation of existing classified equipment. NASA would prefer to the greatest extent possible to use unclassified equipment. On the other hand, permissible NASA programs would necessarily be more severely limited if only unclassified equipment could be used, and for a range of cases valuable photographic data could be released while the equipment would need to remain classified.

E.O. 13526, section 3.3(b)(1)

12. Public awareness of the quality of some of the lower resolution materials released in non-military contexts need not have damaging effect on the viability of unilateral reconnaissance programs, provided care is exercised in the type of materials released and the manner of release. Security of the classified national reconnaissance program would also be enhanced by having NASA conduct the actual launch and retrieval operations of the non-reconnaissance programs.

13. The United States, will, in any case, find it increasingly difficult to control public disclosure of satellite surveillance capabilities. To date the US and the USSR have maintained tacitly acknowledged but unpublicized mutual reconnaissance surveillance. Lately, the USSR has shown what may be indications of a slight loosening up of their own reticence to discuss satellite sensing capabilities by releasing TV photographs of the earth taken by the Molniya satellite, and by publishing in their own press earlier US-released Gemini photographs (without attribution of the source). These steps suggest a possible Soviet willingness to accustom the world to the idea that non-reconnaissance photography from space is a normal activity, and could foreshadow an openly acknowledged future Soviet satellite program for earth-sensing and natural resources development. (The USSR may also use this knowledge later to attempt to undercut the American position on disarmament verification, and as noted earlier this would not necessarily imply any softening of Soviet objection to open acknowledgement of reconnaissance.) Other countries, too, may be contemplating similar programs. Recent French studies of the use of aerial photography for geographic uses have indicated an interest in the use of space platforms as well as aircraft. This interest is not surprising; France is only the first of several countries with developing space programs which will be investigating useful economic or scientific satellite programs in an area that has not already been preempted by the USA or the USSR. In the likelihood that other countries will soon be operating or at least openly discussing the use of observation satellites, it might be to the US advantage to be prepared to take the lead in such discussions and activities. Indeed, at some point we may wish to consider cooperative and collaborative programs not only with other countries in Western Europe and Japan, but even with the USSR, if the political climate were appropriate.

14. The United States should consider steps to apply its highly developed and developing photographic capabilities for the benefit of the underdeveloped countries. In this way the United States can be in a position to provide tangible evidence of our interest in helping developing countries, while forestalling or overmatching possible Soviet propaganda initiative in that field. This will require consideration of a whole range of political, as

well as scientific-technical and security, factors. For example, merely advising developing countries of new resources and opportunities will not always win us plaudits if we are not prepared to assist these countries in realizing these potentialities. Nonetheless, in the longer run there would appear to be real political opportunities to us in taking a more active role than the Soviet Union in applying satellite earth observation to non-military economic uses. This long-run political interest reinforces other reasons for developing the potentialities or non-military uses of earth-sensing by satellites.

15. From the standpoint of protecting security of the classified national reconnaissance program, NASA programs should proceed gradually through current aerial experimentation, to unmanned and manned satellites, and in general moving from less to more precise ground resolution. The technical limits placed on security grounds could probably change as the general state of the art of classified technological capabilities improves and as public awareness and appreciation of them advances. This process of reducing the security margin could not go on indefinitely, but the line of sensitivity probably could recede along the lines indicated above as both technological and political security limitations become less acute. At present, it is generally agreed that the limiting optical ground resolution should be about 20 meters from low earth orbit; public discussion of potential future economic applications should, however, be less restricted.

16. At some point, probably after there had been further initial exploratory study and if the program proved practicable, it would appear that the United States -- perhaps the President himself -- might launch a major public program. At that time, experimental NASA aerial and space photographs could be released, and NASA program plans and expectations described -- all without mention of the classified program. Such an initiative would maximize political gains for the United States. It could, of course, also prompt prominent speculation about classified reconnaissance activities, but such speculation could probably be fended off, and possible hostile Soviet reactions would probably be foreclosed or undercut by the wide interest that the program should generate. However, the question of whether and how any such iniaitive should be made should probably be deferred at this time, and in any case will require further careful consideration.

17. It should be noted that public recognition, even on an incomplete basis, of satellite observation capabilities would also have reverberations in other fields. For example, public awareness of such capabilities should assist in building a consensus in support of disarmament proposals which rely on satellite surveillance. The existence of an openly acknowledged photographic satellite system, even with poorer quality products, would under some circumstances give the US government an additional option: to make public use of satellite photography to prove a violation of an agreement to a world forum, without disclosure of the classified reconnaissance program. In the absence of such a publicly known system, it might be more difficult to make a convincing case that a violation had indeed occurred. At the same time, it may also be used by others to argue against requirements for other verification measures in cases where such requirements remain. By and large, however, disclosure of surveillance capabilities within the limits we are suggesting would probably facilitate distinguishing between what satellite observation can and cannot verify for the purposes of disarmament negotiations.

18. Recommendations:

(1) The classified national reconnaissance program should be protected by continuing to consider carefully the political and security effects of proposed unclassified earth-sensing activities prior to their authorization. Similarly, consideration should continue to be given to the political and security effects of public discussion of such activities. Any party at interest can request the NSAM 155 Ad Hoc Committee to review possible political or security issues which might arise from particular NASA or other non-military plans, programs, or other related activities concerned with spaceborne earth-sensing.

(2) There is potential great political capital in a US program of natural resource surveys and other scientific and economic exploitation of satellite earth observation and sensing, provided the basis has been properly laid, and the announcement of such a program is able to draw upon and project viable economic promise. Further consideration should therefore be given to a major political initiative advancing the concept of economic betterment through space activities. If such an initiative is decided

upon, it should come at a time when sufficient work has been done to demonstrate the potentialities and offer reasonable promise of some early payoff.

(3) At present, and for the next several years, from the standpoint of political and security considerations there is no objection to NASA proceeding with its tentatively planned experimental program, complying with the limitation previously established between NASA and NRO.*

(4) In discussion of the use of observation satellites for natural resources purposes, NASA should, for the next five years -- subject to future review and possible revision of guidelines -- restrict its discussion of future systems to those involving ground resolution of 10-15 feet. The same restriction should apply to all other interested Government agencies. In order to facilitate proper classified control to apply the above general guidelines, and additional detailed implementing guidelines developed by NASA with the concurrence of NRO, a NSAM should be issued directing all other civilian agencies with an interest in satellite earth-sensing for these purposes to make known their interests in that field to, and coordinate fully with, NASA. Apart from other advantages to be expected from such an articulation of responsibilities, it should enable NASA to apply the agreed classified guidelines limitations to other civilian agencies.

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*The Committee accepts as a satisfactory present definition of the limitation on the study, design, development, fabrication, or test of earth sensors by NASA (as proposed in Dr. McMillan's letter to Dr. Seamans of August 5, 1965, and accepted by Dr. Seamans in his reply to Dr. McMillan of August 24, 1965) as those sensors not exceeding a capability of "an angular resolution of 0.1 milliradian or finer, or an optical or infra-red image forming system with a physical aperture greater than 30 cm. and an optical figure controlled to better than 1/4 wave length". This limiting optical resolution is roughly equivalent to 20 meters from low earth orbit.

(5) NASA and other appropriate agencies should consider carefully the relative merits and costs of aerial and other possible alternatives to various space-borne earth-sensing programs in terms of practical political interests as well as cost effectiveness. Similarly, the respective merits of manned and unmanned satellites will of course require consideration. To assist in deciding these questions, NASA and other appropriate Government personnel should be permitted to use selected U-2 and KH-4 photography, most of which is now codeword classified, to advance its studies of non-military earth-sensing applications.

(6) With a view to facilitating the above studies noted in para (5), USIB should be asked to review:

(a) The question of removing reference to the fact that the US has an operational satellite reconnaissance program from codeword control, retaining either a SECRET or TOP SECRET classification. This would permit explanation of the reason for limitations, on a classified basis, to Government personnel concerned with non-military satellite earth-sensing programs but without a need-to-know the performance capabilities or product of the classified program. One of the considerations involved is that at present, uncleared Government personnel often voice their speculations about reconnaissance programs and even capabilities on an unclassified and uncontrolled basis.

(b) Selective removal of appropriate photography from codeword control for classified use by selected NASA and other cleared personnel studying the potentialities of non-military earth-sensing activities, or, alternatively but less desirably, clearance of an increased number of NASA personnel for such use of those materials under present codeword control.

(7) The Director of Central Intelligence, in consultation with the Director of the National Reconnaissance Office, should review and establish appropriate

security restrictions on cameras and other sensing apparatus and equipment which can be made available for NASA's program of non-military applications of satellite earth-sensing. It is recognized that substantial compartmentalization will probably have to remain, but the non-military programs should be enabled to profit from relevant achievements of the military program to the extent feasible.